

Property Assessed Clean Energy in Canada

Design considerations for PACE programs and
enabling legislation

Madi Kennedy, Tom-Pierre Frappé-Sénéclauze, and Betsy Agar

June 2020



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Executive summary

To meet national climate targets and respond to federal and local climate emergency declarations, we will need to invest billions of dollars per year to retrofit existing buildings. Access to public and private financing at a large scale will be critical in achieving this goal. Based on U.S. examples, property assessed clean energy (PACE) financing has the potential to unlock private capital for building retrofits, resulting in energy and emissions reductions, more resilient buildings, economic development, and job creation.

PACE is widespread in the U.S. but has not been implemented in Canada at the same scale. In most Canadian provinces, mechanisms are already in place to allow municipalities to recuperate the costs of public infrastructure upgrades (e.g. improved roads, sidewalks) by adding a local improvement charge to the property taxes of adjacent properties. However, changes in provincial legislation are generally required to authorize municipalities to use such mechanisms to finance upgrades to a private property (such as energy efficiency upgrades).

Based on existing literature and expert interviews, we recommend that provinces that do not yet have PACE-enabling legislation advance such legislation and ultimately harmonize their terms nationally. This provincial enabling legislation should clearly grant authority to local governments to implement PACE-enabling bylaws without being overly prescriptive, to allow for innovation and evolution over time. We recommend that provincial PACE-enabling legislation clearly state:

- The public benefits expected from PACE, including climate action, economic development, and equity
- Local government authority to establish PACE programs on a voluntary basis
- Eligible building types, which should include commercial, residential, industrial and agricultural — both existing and new buildings
- Qualifying measures, which should include energy efficiency, low-carbon energy retrofits, renewable energy, water conservation, climate adaptation, EV-charging, and seismic resiliency
- Funding is available for 100% of project hard and soft costs
- Assessments are transferable from one building owner to the next with sale
- Primary lien status only applies to the delinquent portion of the PACE assessment

- Repayment of the assessment shall not be accelerated automatically or extinguished, in the case of default of foreclosure
- Local governments must implement consumer protection measures in program design
- Programs can access project capital from as private and public sources
- Local government (or administrators) can impose fees to offset the administrative costs
- Contracts for program administrative services can be provided by a third party
- Residential PACE (R-PACE) and commercial PACE (C-PACE) programs are distinct and require different treatment
- PACE financing is not counted towards the municipal debt ceiling

We also recommend the following non-legislative measures be implemented by the federal government in partnership with the provinces:

- Implement a loan loss reserve fund that can be used to cover missed payments due to default.
- Support provinces and cities leading in PACE development, and coordinate research on best practices to facilitate national harmonization of programs, with input from local governments, industry, financial institutions, and utilities.

1. Introduction

To meet national climate targets and respond to federal and local climate emergency declarations, we will need to invest billions of dollars per year to retrofit existing buildings. Access to public and private financing at a large scale will be critical in achieving this goal.¹ Property Assessed Clean Energy (PACE) is an innovative tool that provides access to long-term financing for energy efficiency, water conservation, renewable energy, and resiliency measures for owners and developers of residential, commercial, industrial, institutional, and multifamily properties.² PACE programs can be designed to unlock private investment and become self-supporting without the ongoing need for funding from provincial or local governments.

PACE is widespread in the U.S. and over time has evolved from a financing tool to an industry with underwriters, appraisers, financiers, and contractors as active proponents. To date, nearly \$8 billion have been invested through PACE in 280,000 projects across the U.S., generating nearly \$16 billion in economic activity.^{3,4} PACE has been used to deepen sustainability objectives for retrofit and new construction projects leading to larger reductions in water and energy use, carbon emissions and hazard vulnerability, as well as increasing co-benefits including health and wellbeing, economic development, and job creation.⁵

A variety of PACE models have been implemented with varying levels of success, which we discuss in Section 4.4.1 below. However, there are several principles that hold true for every PACE program:⁶

- Participation is voluntary for all parties involved.
- Financing can cover 100% of a project's hard and soft costs.
- Financing terms are long (up to 30 years).

¹ Government of Canada, *Final Report of the Expert Panel on Sustainable Financing: Mobilizing Finance for Sustainable Growth* (2019), III. https://law-ccli-2019.sites.olt.ubc.ca/files/2019/08/final.report.Expert.Panel._Sustainable.Finance.June_.2019.pdf

² Adam Rose and Dan Wei, *Impacts of the Property Assessed Clean Energy (PACE) program on the economy of California* (USC Price, 2019), 5. http://www.schwarzeneggerinstitute.com/images/files/SI_White_Paper%20PACE_Economic_Impacts_FINAL_3_6_19.pdf

³ PACE Nation, "PACE's Market Data." <https://pacenation.org/pace-market-data/>

⁴ PACE Nation, "PACE Impact." <https://pacenation.org/>

⁵ *Impacts of the Property Assessed Clean Energy (PACE) program on the economy of California*, 5.

⁶ *Impacts of the Property Assessed Clean Energy (PACE) program on the economy of California*, 5.

- Financing can be combined with utility, local and federal incentive programs.
- The PACE financed systems/components must be permanently affixed to a property.
- The PACE assessment is filed with the local municipality as a lien on the property, which is transferred from one owner to the next.

PACE programs have evolved to serve specific needs of different market segments and can roughly be grouped into commercial PACE (C-PACE) and residential PACE (R-PACE). Table 1 summarizes the overarching benefits of PACE financing (compared to traditional financing mechanisms), and the distinct benefits of C-PACE and R-PACE. Depending on program objectives and design there may be other specific benefits not captured in this list.

Table 1. Benefits of PACE

PACE overarching benefits
Addresses consumer resistance to long-term investments by transferring the benefits and repayment responsibilities with the sale of the property.
Long financing terms, up to 30 years, allow owner(s) to repay upgrades throughout the useful life of the measure.
Low lending risk because repayment responsibility is passed on to new owner in case of foreclosure. Studies have also shown that upgrades increase value of property sufficiently to recuperate value of the assessment. As a result, PACE can open access to more competitive interest rates than available on the market (though this varies from program to program). ⁷
Offers opportunities to align outcomes with municipal, provincial, and federal goals (such as GHG emissions and affordability) by making access to desirable financing terms conditional to meeting certain sustainability objectives.
Can be used in conjunction with utility, local and federal incentive programs.
Administration costs are modest for local governments if their role is limited to collection through property taxes and program implementation is handled by third party, utilities, or public agencies.

⁷ L. S. Goodman and J. Zhu, “PACE Loans: does sale value reflect improvements?” *Journal of Structured Finance*, 21(4) (2016). <http://www.ijournals.com/doi/abs/10.3905/jsf.2016.21.4.006>

C-PACE benefits	R-PACE benefits
<p>Addresses the split incentive⁸ barrier: upgrade costs are recovered from tenants as property taxes are passed on through triple-net lease.⁹</p> <p>Offers a range of accounting treatments (i.e. C-PACE assessment can be structured to be off the balance sheet, therefore not impacting the owners' borrowing capacity).</p>	<p>Simplifies and streamlines process for accessing financing.</p> <p>Increases equity: enables participation by lower-income homeowners who may not qualify for traditional loans.</p>

Explicit provincial legislation is required to enable the implementation of a comprehensive PACE program. PACE-enabling legislation has been passed in 36 states, with 49 active PACE programs and 10 in development.¹⁰ In Canada, only Alberta, Ontario, and Nova Scotia have explicit PACE-enabling legislation, but programs have not reached the scale or sophistication seen in the U.S. This document summarizes desirable features for provincial PACE-enabling legislation and some considerations for program design, with some specific information on efforts to move PACE forward in British Columbia.

⁸ Split incentives occur when those responsible for paying energy bills (i.e. the tenant) are not the same entity as those making the capital investment decisions (i.e. the landlord or building owner).

⁹ A triple net lease is a lease agreement on a property whereby the tenant or lessee pays all the expenses of the property including property taxes, building insurance, and maintenance. These payments are in addition to the fees for rent and utilities.

¹⁰ PACE Nation, "PACE Programs." <https://pacenation.org/pace-programs/>

2. State of PACE legislation and programs in Canada

In most Canadian provinces, mechanisms are already in place to allow municipalities to recuperate the costs of public infrastructure upgrades (e.g. improved roads, sidewalks) by adding a local improvement charge to the property taxes of adjacent properties. However, changes in provincial legislation are generally required to authorize municipalities to use such mechanisms to finance upgrades to a private property (such as energy efficiency upgrades).¹¹ Once enabling legislation is in place at the provincial level, municipal governments can determine the program specifications and implement PACE through bylaw amendments. The following section summarizes the state of PACE in provinces with PACE-enabling legislation (Nova Scotia, Ontario and Alberta) and discusses further the context for the development of PACE legislation in B.C.

2.1 Nova Scotia

In 2010, Nova Scotia amended its Municipal Government Act section 81A(1)(d) to authorize PACE programs.¹² Nova Scotia has PACE programs in 10 municipalities: seven of them are administered by Clean Foundation, a not-for-profit third-party administrator,¹³ while the other three are administered directly by the municipalities or have procured their own program administrator (including programs in the City of Halifax, the Town of Berwick, and the Municipality of the District of Shelburne).

¹¹ Local improvement charges (LICs) are used by municipalities to help cover the costs of infrastructure improvements (roads, sidewalks, etc.) deemed to benefit a specific neighbourhood. The benefiting landowners are assessed the LIC on their property taxes until their share of the improvements have been paid for. Roger Peters, Matt Horne, and Nicholas Heap, *Using Local Improvement Charges to Finance Building Energy Efficiency Improvements: A Concept Report* (Pembina Institute, 2004), 1. <https://www.pembina.org/node/942>

¹² Clean Foundation, “Clean Energy Financing: FAQs.” <https://clean.ns.ca/energy-financing/>

¹³ “Clean Energy Financing: FAQs.”

The programs administered by Clean only apply to single family homes and have caps of up to \$20,000 with 10-year repayment terms.¹⁴ Homes participating in Clean’s PACE program reduced their total energy consumption by 33% on average.¹⁵

The City of Halifax has Solar City, a PACE program for financing household solar energy systems, which offers financing for up to 80% of the home’s assessed value and has repayment terms up to 10 years.^{16,17}

The Town of Berwick implemented its own PACE Program in 2013 for residential PACE. In 2019, they expanded the program to include commercial buildings, making this the first C-PACE program in Canada. The program was administered by the municipality until 2019, when Equilibrium Engineering took over program administration. Customers can borrow up to 15% of the property’s assessed value with 4% interest rates and repayment periods up to 10 years.¹⁸

2.2 Ontario

Ontario passed amendments to legislation in 2012 to explicitly enable municipalities to establish PACE programs. Despite the enabling legislation, Ontario has only two PACE programs, both in the City of Toronto: the Home Energy Loan Program (HELP) and the High-Rise Retrofit Improvement Support Program (Hi-RIS). The HELP program is limited to single-family homes and has a \$75,000 cap with 20-year repayment terms.¹⁹ The Hi-RIS program is limited to apartment building for measures that reduce energy and water consumption, and renewable energy projects.²⁰ Hi-RIS provides up to 10% of a

¹⁴ Clean, “Clean Energy Financing.” <https://clean.ns.ca/energy-financing>

¹⁵ Kathy Johnson, “Clean Energy Financing Program to be Offered Again,” *The Chronicle Herald*, 2017. Cited in Mukesh Khanal, *A PACE Program in Alberta: An Analysis of the Issues* (University of Calgary, 2019). <https://www.policyschool.ca/wp-content/uploads/2019/04/PACE-Program-Khanal.pdf>

¹⁶ Halifax, “About Solar City.” <https://www.halifax.ca/home-property/solar-projects/about-solar-city-halifax>

¹⁷ Solar Assist Nova Scotia, “Rebates and Financing.” <https://www.solarassist.ca/rebates-and-financing>

¹⁸ The Town of Berwick, “Berwick Green Energy Program.” <https://www.berwickenergy.ca/>

¹⁹ City of Toronto, “Home Energy Loan Program.” <https://www.toronto.ca/services-payments/water-environment/environmental-grants-incentives/home-energy-loan-program-help/>

²⁰ City of Toronto, “High-Rise Retrofit Improvement Support Program.” <https://www.toronto.ca/community-people/community-partners/apartment-building-operators/hi-ris/>

building's assessed value (up to a maximum of \$2 million per building) at interest rates between 2-3.75% with repayment terms up to 20 years.²¹

Ontario's legislation has left local municipalities with some remaining questions; they are currently seeking clarification from the provincial government about the impact of PACE on municipal debt ceilings, whether PACE qualifies as bonusing for commercial buildings,²² and the authority of cities to use a third-party administrator.²³

2.3 Alberta

In 2018, Alberta passed legislation to enable municipalities to develop and enact PACE bylaws and deliver retrofit financing. Energy Efficiency Alberta (EEA), an arm's-length government entity, was legislated to be the exclusive administrator of PACE programs on behalf of participating municipalities.²⁴ As the administrator, EEA would provide customer support, work with municipalities to establish their respective bylaws, and set up the repayment mechanism through the municipal property tax system.

EEA's provincial funding has subsequently been reversed and its role in administering Alberta's PACE programs is currently uncertain. In this context, the City of Edmonton, the Town of Devon and the Town of Rocky Mountain House are continuing to develop their plans to implement PACE. If EEA does not have capacity to administer Alberta's PACE programs, the municipalities would have to request permission to administer the program themselves through a ministerial order.²⁵

2.4 British Columbia

British Columbia does not currently have PACE legislation, but municipalities in B.C. have called on the province to pass enabling legislation several times. Notably, the

²¹ City of Toronto, "Hi-RIS Program Overview." <https://www.toronto.ca/community-people/community-partners/apartment-building-operators/hi-ris/program-overview/>

²² Bonusing is a planning tool that municipalities have authority to use, which allows a municipality to grant a developer bonus (generally through additional height or density) beyond that allowed by prevailing zoning restrictions in exchange for the provision of community benefits.

²³ Gaby Kalapos, Clean Air Partnership, personal communication, January 8, 2020.

²⁴ Government of Alberta, *Municipal Government Act: Clean Energy Improvements Regulation*, AR 212/2018, 2. http://www.qp.alberta.ca/documents/Regs/2018_212.pdf

²⁵ Barbara Daly, City of Edmonton, personal communication, January 28, 2020.

Union of BC Municipalities passed resolutions supporting PACE in 2014, 2016 and 2019.^{26,27}

Some legal opinions highlight that R-PACE financing by local governments is already permissible under the B.C. Community Charter using Local Area Service Charges. They use the rationale that while municipally-owned infrastructure has been the traditional application of Local Area Service Charges,²⁸ significant reductions in GHG emissions and risks of oil spills (from heating oil systems) constitute direct community benefits and services and warrant the use of LICs for home energy upgrades. Under this premise, the City of Saanich intends to pilot a PACE program.²⁹

²⁶ Union of BC Municipalities, *Resolutions to be Considered at the 2014 UBCM Convention* (UBCM, 2014), 136. https://www.ubcm.ca/assets/Resolutions~and~Policy/Resolutions/2014ResolutionsBook_FINAL_WEB.pdf; Union of BC Municipalities, *Resolutions to be Considered at the 2016 UBCM Convention* (UBCM, 2016), 101. https://www.ubcm.ca/assets/Resolutions~and~Policy/Resolutions/2016_UBCM_Resolutions.pdf; Union of BC Municipalities, *2018 UBCM Annual Report & Resolution* (UBCM 2019), 186. <https://www.ubcm.ca/assets/Resolutions~and~Policy/Resolutions/2019%20UBCM%20ANNUAL%20REPORT%20&%20RESOLUTIONS%20BOOK.pdf>

²⁷ The responses from the province to date have indicated they do not intend to explore an amendment, citing that the original intent of Local Area Services was to finance improvements on public rather than private property, and raising concerns about the capacity of local governments to take on such a program. Corporation of the District of Saanich, *Home Energy Retrofit Municipal Financing Pilot*, report, February 12, 2019. http://saanich.ca.granicus.com/MetaViewer.php?view_id=1&clip_id=241&meta_id=13403

²⁸ LICs are used when a municipality provides improvements to one or more properties (e.g. road paving or sidewalk construction). The municipality pays for the improvements and arranges for the work to be carried out. An LIC is then assessed and assigned to each property that benefits from the improvement; it is paid back through an addition to property tax.

²⁹ The City of Saanich is designing a PACE program to be implemented in late 2020. The program will be limited to providing financing for single-family homes to transition from oil heating to electric heat pumps; financing is capped around \$12,000. Deborah Herbert, District of Saanich, personal communication, January 9, 2020.

3. Recommendations for enabling legislation

B.C. and other provinces without enabling legislation can gain insights to guide their legislation and program design from the decade of experience in PACE programs across North America.³⁰ Here we summarize key consideration from literature review and expert interviews.

Commentators indicate that a balance must be struck between specificity and flexibility: keeping enabling legislation broad and not too prescriptive is useful as it allows the program to evolve over time. On the other hand, leaving the legislation too vague can cause municipalities to be uncertain of their authority and hesitant to implement PACE. Best practice PACE-enabling legislation should include the following elements:^{31,32,33,34}

Purpose	State clearly the public benefits expected from PACE (e.g. GHG emission reductions, water conservation, energy efficiency, adaptation, economic development, avoided cost). ³⁵
Authority	Give local government clear authority to establish PACE programs.
Voluntary	Leave the adoption of PACE programs as optional for local governments.

³⁰ City of Berkeley, “Energy and Sustainable Development.” <https://www.cityofberkeley.info/PACE/>

³¹ PACENation, *Model Clauses Checklist* (2018). <https://www.pacenation.org/wp-content/uploads/2018/10/Model-Clauses-Checklist-.pdf>

³² Dunsy Energy Consulting, *Ontario Municipalities Local Improvement Charge Programs for Energy Upgrades* (Clean Air Partnership, 2016). <http://www.cleanairpartnership.org/wp-content/uploads/2016/10/CAP-LIC-Update-Study-Report-2016-05-31.pdf>

³³ Sonja Persram, *Property Assessed Payments for Energy Retrofits* (David Suzuki Foundation, 2011). http://www.sustainable-alternatives.ca/PAPER_Persram_for_DSF.pdf

³⁴ See list of interview participants in Appendix A.

³⁵ Understanding government rationale for offering the program makes the program more trustworthy. Some participants have felt this type of program requires sharing too much information with the government. Ipsos Reid, *Cheerio LIC Program Evaluation Qualitative Research Study*, prepared for City of Toronto and CHEERIO (2016), 29. Available at <https://www.cleanairpartnership.org/wp-content/uploads/2016/08/CHEERIO-Qualitative-Study-April-2013.pdf>

Collaboration	Allow local governments to offer PACE in concert with other local governments (to promote economies of scale).
Eligible buildings	Identify which building types can access the program. Legislation should allow for a large range of buildings including new and existing commercial, residential, industrial, and agricultural.
Eligible measures	Broadly define eligible measures, including energy efficiency, low-carbon energy retrofits, renewable energy, water conservation, climate adaptation, EV-charging, and seismic resiliency. Specific measures should be defined at the program design level.
Fund 100% of project costs	Allow PACE to cover 100% of a project’s hard and soft costs (including audits, project development, and application fees).
Permanently affixed to property	Specify that improvement measures and equipment must be permanently affixed to the property.
Transferable	State that the outstanding balance of assessments are transferred from one building owner to the next with sale.
Primary lien status	Clarify that PACE assessments, like other property taxes, take precedence in case of default, but that the primary lien status only applies to the delinquent portion of the PACE assessment (to minimize the risk to mortgage lenders in the case of default; see Section 4.1).
Repayment terms	State that if the property owner defaults on payments or enters into foreclosure, repayment of the assessment shall not be accelerated automatically or extinguished, and the balance of the assessment shall be repaid according to the terms of the agreed-upon schedule (see Section 4.1). This does not prohibit voluntary prepayment.
Consumer protection	Require consumer protection measures (e.g. the use of an ability-to-pay criteria, contractor certification and standards, and/or protocols for vulnerable populations) in R-PACE

	program design. Allow municipalities and PACE administrators to determine which measures to use (see Section 4.3).
Funding sources	Allow programs to access project capital from as many sources as possible, including private and public.
Administration fees	Declare the right of municipalities to impose fees to offset the administrative costs.
Third-party administration	Allow contracts for program administrative services to be provided by a third party (see Section 0).
R-PACE and C-PACE	Recognize that residential PACE (R-PACE) and commercial PACE (C-PACE) programs are distinct and require different treatment.
Debt ceiling	Exempt PACE financing from being counted towards the municipal debt ceiling (since PACE financing is 100% secured and recoverable).
Additional non-legislative measures:	
Loan loss reserve fund	Establish a provincial or federal LLR that can be used to cover missed payments due to default (see Section 4.1).

4. Issues

The following section considers some of the challenges that have arisen in the design of PACE-enabling legislation and other aspects that should be considered when setting terms for PACE programs.

4.1 Primary lien status

PACE assessments are secured against the value of your home and because they are repaid through property taxes, they have the same primary lien status as property taxes. This has caused friction with the mortgage industry and has been a barrier to PACE adoption (particularly R-PACE) in the U.S. and Canada.^{36,37} Liens are typically prioritized by the order in which they are filled except for property taxes (and in some cases federal taxes), which have priority. Primary lien status means that in the case of default, the entire PACE assessment is repaid before a first mortgage, which is a subordinate lien. Figure 1 provides an example of a typical lien prioritization.

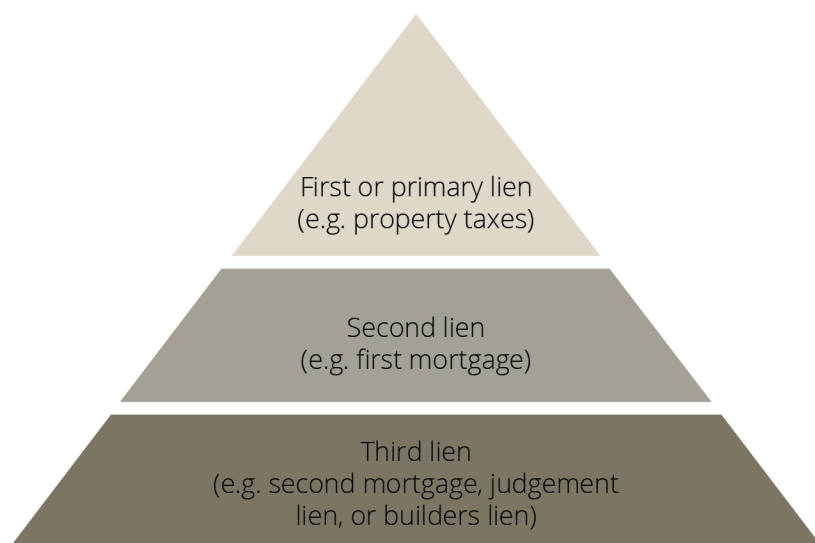


Figure 1. Example of a typical property lien prioritization

³⁶ TAF, *Energy Efficiency Financing Tools for the Canadian Context* (2017). <http://taf.ca/wp-content/uploads/2017/03/Public-Financing-Tools-Guidance-Note-Mar-2017.pdf>

³⁷ ICLEI Canada, *On the money: Financing tools for local climate action* (Partners for Climate Protection, 2018). <https://fcm.ca/sites/default/files/documents/resources/guide/financing-tools-local-climate-action-pcp.pdf>

Provinces can mitigate the risk for mortgage lenders by:

- prohibiting acceleration or extinguishment of PACE assessments in the case of default or foreclosure
- clarifying in legislation that the primary lien status only applies to the delinquent portion of the PACE assessment (see text box below)
- setting up a third-party loan loss reserve fund.

Prohibiting the automatic acceleration or extinguishment³⁸ of PACE assessments with default or foreclosure helps reduce risks to mortgage holders by restricting municipalities to collecting only overdue payments, as opposed to the entire value of the assessment.^{39,40} This also reduces risk and exposure for property owners. In California, state law does not permit acceleration provisions for PACE.

Loan loss reserve funds (LLRs) are pools of funding from which financial entities can recover a portion of their losses when a borrower defaults. Government entities will often set up third-party LLRs for clean energy financing to help advance their energy priorities or catalyze private investment in clean energy projects. Third-party LLRs can offset some of the risks for private investors and mortgage holders by providing bridge payments for any losses incurred on PACE investments (for lenders), or on properties with PACE assessments (for mortgage holders) in the case of default.⁴¹ California's Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) has designed their LLR to compensate first mortgage holders if losses are incurred in a foreclosure resulting from a PACE lien.⁴² To be eligible for the reserve funding, PACE providers have to conform to certain CAEATFA standards.⁴³ To date, the LLR covers more than \$1.2 billion in PACE financing and has not yet had any claims against it.⁴⁴

³⁸ An *acceleration* clause is a contract provision that allows a lender to require a borrower to repay all of an outstanding assessment if certain requirements are not met. *Extinguishment* is the elimination of a debt by paying the full balance owed or by replacing it with another debt instrument.

³⁹ Mark Zimring and Merrian Fulle, *Accelerating the Payment of PACE Assessments* (Lawrence Berkeley National Laboratory, 2010), 2. <https://escholarship.org/content/qt5c3797bx/qt5c3797bx.pdf>

⁴⁰ U.S. Department of Energy, *Best Practice Guidelines for Residential PACE Financing Programs* (2016). 12. <https://www.energy.gov/sites/prod/files/2016/11/f34/best-practice-guidelines-RPACE.pdf>

⁴¹ American Council for Energy Efficient Economy, "Loan Loss Reserves for Energy Efficiency Financing Programs." <https://www.aceee.org/toolkit/2020/02/loan-loss-reserves-energy-efficiency-financing-programs>

⁴² *Accelerating the Payment of PACE Assessments*, 5.

⁴³ "Loan Loss Reserves for Energy Efficiency Financing Programs."

⁴⁴ California State Treasurer, "Property Assessed Clean Energy (PACE) Loan Loss Reserve Program." <https://www.treasurer.ca.gov/caeatfa/pace/activity.asp>

Some R-PACE programs have managed ongoing opposition from the mortgage industry by requiring mortgage lender consent for participation in PACE. The City of Toronto has taken this approach, which has resulted in low uptake because the Canada Mortgage and Housing Corporation (CMHC) has stated they will not approve PACE assessments on any homes with CMHC-insured mortgages.⁴⁵ Similarly, in the U.S., Fannie Mae and Freddie Mac (the two federally established mortgage providers) cannot purchase mortgage loans secured by properties with outstanding PACE assessments unless the terms of the assessment do not provide for lien priority over first mortgage liens⁴⁶ (see text box below for more information).

R-PACE and mortgage lenders in the U.S.

In 2010, Fannie Mae and Freddie Mac (the government-sponsored finance agencies of the home mortgage market) issued new guidance that regarded PACE as a mortgage contract violation. In doing so, Fannie Mae and Freddie Mac could refuse to subsidize home mortgages that had PACE liens.⁴⁷ As a result, most local and state governments paused development of R-PACE programs. In response to the halt on PACE, over 40,000 politically active organizations, businesses, and individuals who supported the environmental benefits of PACE voiced their support to government officials.⁴⁸

In July of 2016, the Federal Housing Authority issued guidelines that removed the barriers preventing Fannie Mae and Freddie Mac from insuring home mortgages with PACE liens. The innovative solution was to have only the delinquent portion of the PACE assessment come ahead of the mortgage.⁴⁹

In December of 2017, after a change in government, the Federal Housing Authority reversed the 2016 guidelines by announcing that it would not insure mortgages for homes with PACE assessments.⁵⁰ This reversal impacts the ability for a homeowner to

⁴⁵ Gaby Kalapos, Clean Air Partnership, personal communication, Jan 2020.

⁴⁶ Fannie Mae, "Selling Guide B53.4 -01: Property Assessed Clean Energy Loans." <https://www.fanniemae.com/content/guide/selling/b5/3.4/01.html>

⁴⁷ Pace Avenue, "History of PACE financing in California and across the U.S." <https://paceavenue.com/history-pace-financing-california-across-u-s/>

⁴⁸ "History of PACE financing in California and across the U.S."

⁴⁹ John Caleb Bell and Colin J. Kalvas, *Property Assessed Clean Energy (PACE) Financing: The Ohio Story* (Brecker & Eckler, 2018), 6. <https://www.bricker.com/insights-resources/publications/property-assessed-clean-energy-pace-financingthe-ohio-story>

⁵⁰ *Property Assessed Clean Energy (PACE) Financing: The Ohio Story*. 6.

transfer the PACE assessment with the property to a buyer using a Fannie Mae or Freddie Mac loan, as the buyer and seller must now negotiate the payoff in the home purchase.⁵¹

Requiring mortgage lender consent is common practice for C-PACE programs, and there has been limited opposition to PACE assessments. However, obtaining consent from the mortgage holders can be a lengthy process, particularly if the mortgage holder lacks experience with energy efficiency projects or PACE financing.⁵² This is becoming less of a barrier as lenders become more familiar with C-PACE and its positive effects on cash flow and property values.⁵³

4.2 Savings-to-investment ratio

A savings-to-investment ratio (SIR) of one or greater means that projected annual cost savings from a project are greater than repayment installments.^{54,55} While strict requirements for a SIR greater than one may seem compelling for consumer protection and reducing lending risks, there is little evidence that improvements that have positive cash flows lead to lower rates of defaults.⁵⁶

SIR requirements of one or greater for PACE financing can also be detrimental to achieving the social benefits expected from PACE programs, as not all socially valuable retrofits generate cost savings. This is the case for seismic upgrades, climate adaptation measures, and sometimes fuel switching (replacing low-cost fossil fuels by higher-cost clean energy sources). Creating a legislative requirement for an SIR of one or greater would undermine the carbon reduction and safety objectives that are a key driver for the policy.

Ability to pay, rather than a prescribed SIR of one or greater, should be used in underwriting and program eligibility to protect consumers and lenders. Decisions on

⁵¹ “History of PACE financing in California and across the U.S.”

⁵² American Council for an Energy Efficient Economy, “Property Assessed Clean Energy (PACE)” <https://www.aceee.org/toolkit/2020/02/property-assessed-clean-energy-pace>

⁵³ Ibid.

⁵⁴ Greg Leventis, Emily Martin Fardhonc, Chris Kramer, and Charles Goldman, *Current Practices in Efficiency Financing: An Overview for State and Local Government* (Lawrence Berkeley National Laboratory, 2016), 48. <https://www.osti.gov/servlets/purl/1332131>

⁵⁵ This is a requirement of the Nova Scotia Program. Clean, “Clean Energy Financing.”

⁵⁶ Clean Energy Finance and Investment Authority, *Residential Property Assessed Clean Energy: A Connecticut Program Viability Assessment* (2015), 51. <https://www.cesa.org/wp-content/uploads/R-PACE-CT-Viability-Assessment.pdf>

this should be left to the program administrator and lender, not specified in the legislation.

4.3 Other consumer protection measures

R-PACE programs can drive greater equity by allowing access to lower-income homeowners who may not be able to access traditional financing. However, one of the biggest challenges with R-PACE program design is the need to balance consumer protection and accessibility. Adequate consumer protection (e.g. against predatory sale strategies) is essential and can be facilitated by using third-party certified energy advisors or regulated trades or professionals, which already have oversight mechanisms. The trade-offs of requirements such as mandatory energy audits, rigorous ability to pay criteria, and measuring, monitoring and verification need to be carefully balanced against the ease of access for building owners.

C-PACE programs have different considerations for consumer protection and can generally use a lighter touch, as most C-PACE deals are relatively large projects and transactions with sophisticated borrowers.⁵⁷

Again, this should be determined through program design and not prescribed in the legislation.

4.4 Program administration and sources of capital

4.4.1 Program administration

There are three common administrative models for PACE programs (see Appendix A for diagrams):

- **Public program, government administration** (e.g.: City of Toronto's HELP program⁵⁸): In this model, local governments finance and administer the PACE program. This requires the government to invest resources into designing and implementing the program, including marketing, setting eligibility criteria, and managing the finances. This model was common in early PACE programs and has the benefit of strong alignment with municipal priorities, and lower interest

⁵⁷ Greg Leventis, Lisa Schwartz, Chris Kramer and Jeff Deason, *Lessons in Commercial PACE Leadership: The Path from Legislation to Launch* (U.S. Department of Energy, 2018), 29.

https://www.energy.gov/sites/prod/files/2018/03/f49/Lessons_in_Commercial_PACE_Leadership_Final.pdf

⁵⁸ *Ontario Municipalities Local Improvement Charge Programs for Energy Upgrades*, 24.

- rates (because the financing is often provided through grants or a municipal funding envelopes). The administrative requirements for this model make it prohibitive for smaller municipalities and inefficient to roll out a provincial scale.
- **Public program, contractor administration** (e.g. CLEAN in Nova Scotia, and the Alberta PACE program): In this model, third-party providers partner with local governments to offer services for PACE programs including program initiation, marketing, and ongoing administration. Local governments are generally still responsible for securing capital for PACE assessments. This model allows multiple local governments to use a single administrator, making it more efficient than the local government administrated model and allowing smaller municipalities to easily deliver PACE programs. Collaborative program design with local governments can ensure alignment with provincial and municipal priorities. If these programs do not have a mechanism to easily access private capital, they can be difficult to scale.
 - **Private program, private administration** (e.g. California’s HERO program): Private sector administrators offer a one-stop shop for PACE programs including design, set-up, administration, and access to private capital and recapitalization. Local governments are only responsible for enacting enabling bylaws and registering and adding PACE assessments to the property tax roll. The private sector administrator often serves as an aggregator, bundling several PACE assessments into securities that can be purchased by institutional investors, thus re-capitalizing the fund.⁵⁹ With this model, there tends to be less alignment with provincial and municipal priorities, and interest rates are often higher due to administration costs and private financing; however, it has delivered some of the most successful PACE programs in the U.S. Access to unlimited private capital has allowed the programs to scale, while superior marketing and outreach have led to significantly greater uptake than all other models despite the higher interest rate.⁶⁰ In the U.S. we are now seeing this model evolve into ‘competitive market’ with multiple PACE programs in one jurisdiction (see text box below).

⁵⁹ Robert Johnson, Jr, *PACE Financing: A Primer for real estate investment management professionals* (The Letter -Americas, 2015), 52. Available at https://www.paceab.ca/resources/02._PACE_Financial_Primer.pdf

⁶⁰ OECD, *Green Investment Banks: Scaling up Private Investment in Low-carbon, Climate-resilient Infrastructure, Green Finance and Investment* (2016), 85. https://read.oecd-ilibrary.org/finance-and-investment/green-investment-banks_9789264245129-en#page4

4.4.2 Sources of capital

The up-front capital to fund PACE improvements can come from a range of public or private sources and is often tied to the program administration model and the policy goals driving the program. Public capital relies on grants, taxes, or other sources of public revenue, whereas private capital is generally accessed in one of three ways (although variations are possible).

- **Warehoused:** The program administrator initially uses public capital or a large line of credit to fund PACE assessments and then holds (or “warehouses”) them before selling an aggregated pool of assessments to private investors.⁶¹ Administrators typically accumulate a large pool of assessments (e.g. \$20 million) to reduce transaction costs associated with packaging and re-selling PACE assessments.⁶²
- **Privately funded:** The designated program administrator uses a line of credit or other investment capital to fund PACE assessments, and these are either held as an investment or re-sold in a secondary market transaction. In some cases, the administrator has negotiated to have public entities use public bonding mechanisms on their behalf to facilitate this secondary market transaction.⁶³
- **Open market model:** One or more financial institutions invest directly in a PACE assessment at terms negotiated with the property owner. Any qualified financial institution may participate, removing the program administrator’s involvement in accessing capital. In the open market approach, strong guidelines and additional infrastructure are needed to coordinate activities (see text box below).⁶⁴

CSCDA’s Open PACE Program

The California Statewide Communities Development Authority (CSCDA) is an advanced example of a private PACE financing program. The program finances the installation of eligible products by issuing bonds backed by the assessments created by the Open PACE Program. CSCDA is unique in that it brings multiple PACE programs together to compete for homeowners’ business, whereas traditional private models are limited to one

⁶¹ U.S. Department of Energy, *Commercial Property-Assessed Clean Energy (PACE) Financing* (2010), 9. https://www1.eere.energy.gov/wip/solutioncenter/pdfs/revFinal_V3Ch13CommercialPACEDec9.pdf

⁶² *Current Practices in Efficiency Financing: An Overview for State and Local Government*, 46.

⁶³ *Ibid.*, 47

⁶⁴ *Ibid.*, 47.

program per municipalities. California cities and counties must be a member of CSCDA and adopt a resolution to opt-into CSCDA's Open PACE to participate. Member cities and counties must also register PACE assessments and add them to the property tax roll.⁶⁵ This competitive model is expected to lower interest rates and broaden access; however, it requires careful oversight and consumer protection.

In the U.S., there has been a natural shift in administration from local government to the private sector over time. PACE programs are most effective when economies of scale can be leveraged to gain access to private capital and to third-party administrators who can deliver programs at the regional, provincial, or state scale. Experience from the U.S. indicates that it takes scale and time to create a PACE ecosystem where property owners, underwriters, appraisers, financiers, and contractors understand PACE and are comfortable with its promotion and use.⁶⁶

Despite the advantages of third-party models, requiring third-party administration and/or naming an administering body in legislation is not recommended. The Alberta case study highlights the risks and political vulnerability of this approach: the EEA, a provincially funded body, was named in legislation as the exclusive PACE administrator. EEA's funding has since been reversed because of a change of government, putting the program's viability into question.

We recommend that enabling legislation open the door to all three models, and that the choice of a private or a public third-party administrator be made after consultation with local and industry partners.

4.5 PACE for new buildings

4.5.1 How to assess eligible costs

PACE programs can provide financing for new buildings by determining the incremental cost of energy efficiency measures or renewable energy.⁶⁷ In the U.S., C-PACE is increasingly being used to reach higher levels of performance in new commercial buildings. For commercial buildings it is fairly easy to determine what measures go

⁶⁵ *Ontario Municipalities Local Improvement Charge Programs for Energy Upgrades*, 24.

⁶⁶ *Current Practices in Efficiency Financing: An Overview for State and Local Government*, 50.

⁶⁷ The incremental cost is the difference in the cost of a base case energy efficiency measure compared to the cost of a higher efficiency alternative. It represents the incremental cost that the customer must pay in order to gain the energy savings benefits from the higher efficiency measure.

beyond base case, as costing methodologies are reasonably well established and ‘base case’ designs have been defined for performance-based codes and green certification programs. For single family homes, however, determining incremental measures (and associated costs) goes beyond standard procedure and the administrative burden is therefore higher. Alternative measures that can be taken in legislation and program design to unlock R-PACE for new homes include: limiting eligible costs to 10-15% of total construction costs; mandating performance criteria; defining eligible measures; and certifying the performance after implementation.⁶⁸

4.5.2 Should developers be eligible?

Another question about new buildings is whether developers should be eligible to apply for PACE assessments even if they do not plan to maintain ownership of the asset. In Ontario, for example, developers are not eligible to access PACE financing. Legislation and/or bylaw amendments should clarify the eligibility of developers and include their participation wherever possible.

4.6 National harmonization

While PACE-enabling legislation falls under provincial jurisdiction, national harmonization among program terms could be beneficial, particularly in the commercial sector. Each Canadian province is a relatively small market, and business models need to be able to scale beyond each of these regions to be successful. In addition, setting up the first PACE financing business case for building owners can be a significant investment in legal and administrative costs and presents inherent innovation risks.^{69,70} The capacity to replicate the model across a national portfolio is key to overcoming these initial hurdles. Large commercial property managers — who have the most capacity to absorb these innovation costs — will need to be able to leverage this new model in buildings across different provinces. This will not be possible with a patchwork of PACE programs across Canada, having a limited number of provinces with programs in place and all with different eligibility criteria and terms. Coordination across

⁶⁸ Radhika Lalit and Alisa Peterson, *R-PACE: A Game-Changer for New-Zero Energy Homes* (Rocky Mountain Institute, 2017), 10. https://rmi.org/wp-content/uploads/2017/10/RMI_R-Pace_for_NZE_Insight_Brief_2017.pdf

⁶⁹ Charles Keenan, “PACE Financing Could Accelerate Financing Sustainability Projects,” *Nareit*, July 22, 2015. <https://www.reit.com/pace-financing-could-accelerate-financing-sustainability-projects>

⁷⁰ *Lessons in Commercial PACE Leadership: The Path from Legislation to Launch*, 23.

provinces could increase the success of the C-PACE programs and will facilitate the emergence of comprehensive retrofit companies for the residential sector.⁷¹

⁷¹ PACE in a Box provides an effective example of voluntary harmonization within the state of Texas. PACE in a Box contains everything a county or municipality requires to establish effective PACE programs at the local or regional level throughout the state. Keeping PACE in Texas, “About us.” <https://www.keepingpaceintexas.org/library/document-library/>

5. Conclusion

To meet national climate targets and respond to federal and local climate emergency declarations, we will need to invest billions of dollars per year to retrofit existing buildings. Access to public and private financing at a large scale will be critical in achieving this goal. Successful U.S. examples show PACE financing has the potential to unlock private capital for deep building retrofits and net-zero energy new construction, resulting in energy and emissions reductions, more resilient buildings, economic development, and job creation.

We recommend that provinces without PACE-enabling legislation advance such legislation and seek to harmonize their terms nationally. This provincial enabling legislation should clearly grant authority to local governments to implement PACE-enabling bylaws without being overly prescriptive, to allow for innovation and evolution over time.

The federal government should support provinces and cities leading in PACE development, and coordinate research on best practices to facilitate national harmonization of PACE programs, seeking input from local governments, industry, financial institutions, and utilities.

Appendix A. PACE Models

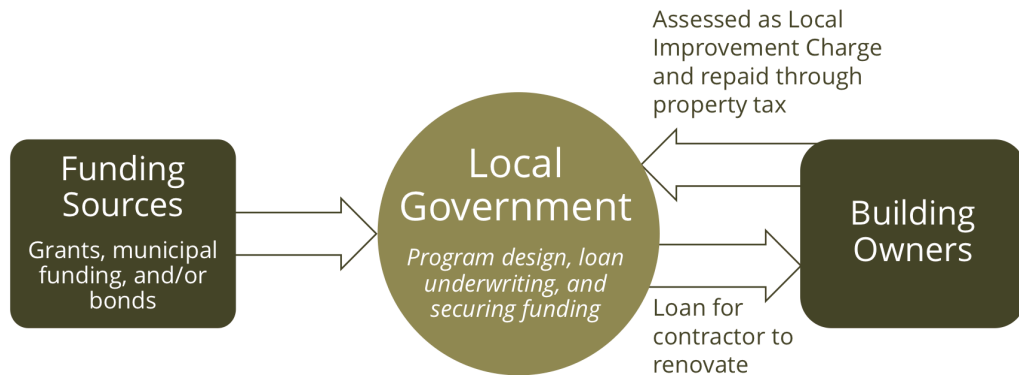


Figure 2. Public program, government administration

Adapted from: Managan and Klimovich⁷²

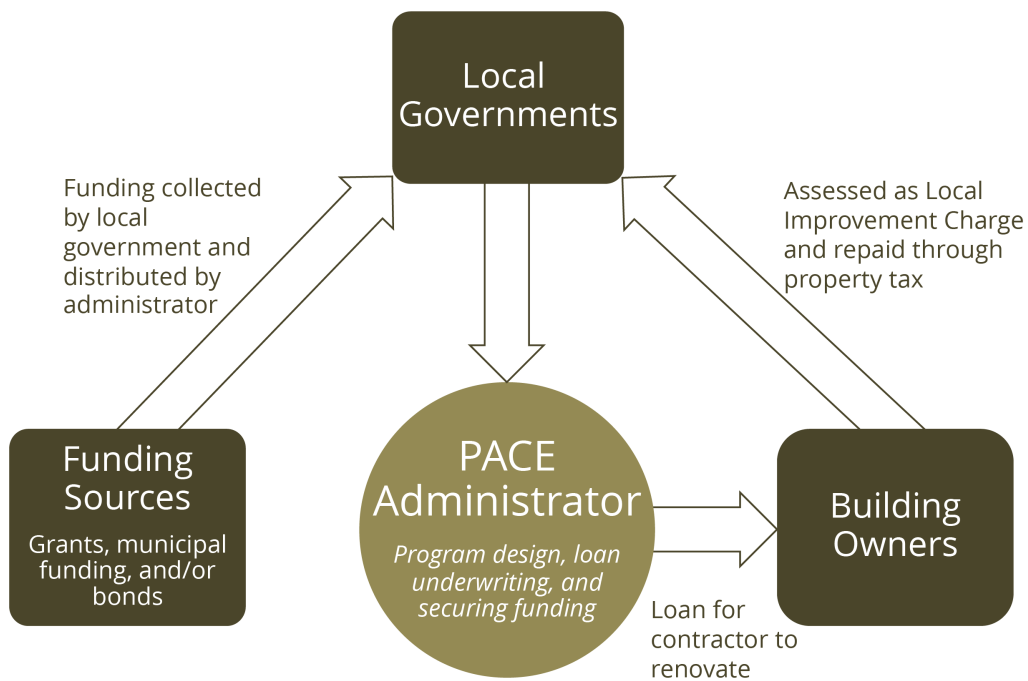


Figure 3. Public program, contractor administration

Adapted from: Managan and Klimovich⁷³

⁷² Katrina Managan and Kristina Klimovich, *Setting the PACE: Financing Commercial Retrofits* (Institute for Building Efficiency, 2013) 10. https://www.pacenation.org/wp-content/uploads/2013/02/Setting-the-PACE_Feb2013.pdf

⁷³ *Setting the PACE: Financing Commercial Retrofits*, 10.

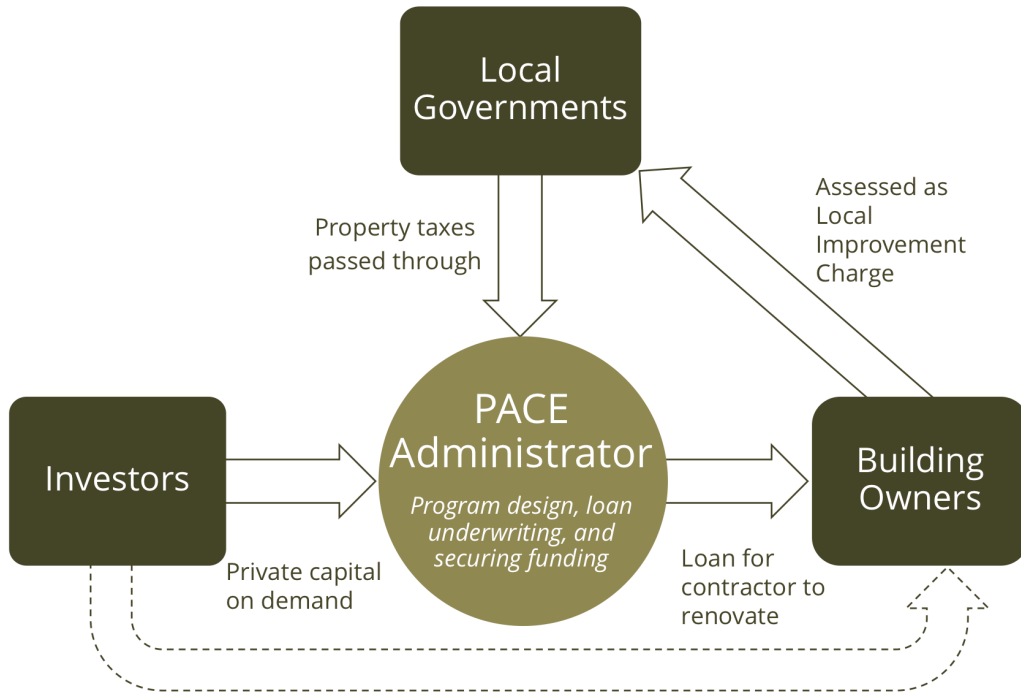


Figure 4. Private program, private administration

Adapted from: OECD⁷⁴

⁷⁴ *Green Investment Banks: Scaling up Private Investment in Low-carbon, Climate-resilient Infrastructure, Green Finance and Investment*, 85.

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